Sierra Nevada Conservancy Grant Program
Safe Drinking Water, Water Quality and Supply, Flood Control,
River and Coastal Protection Act of 2006 (Proposition 84)

Subregion: **SOUTH CENTRAL** **County: TUOLUMNE**

Applicant: **TUOLUMNE UTILITIES DISTRICT**

Project Title: **TUOLUMNE DITCH SYSTEM SUSTAINABILITY PLAN**

Reference Number: **SNC 070135**

PROJECT SCOPE

The Tuolumne Utilities District will develop the Tuolumne County Ditch System Sustainability Plan. Specifically, the District will:

- Develop a scalable Geographic Information System (GIS) to manage geospatial information;
- Utilize newly implemented GIS system to support program activities, including alternatives development, cost estimating, CEQA compliance, permitting, and ongoing operation and maintenance including performance monitoring;
- Hire part-time staff and/or consultants to perform field surveys using a Global Positioning System (GPS) to locate and map existing ditch features such as gunite-lined sections, known leaks, valves, weirs, controls, and other features;
- Hire a consultant to evaluate eligibility of the system for classification under the National Register of Historic Places (NRHP);
- Hire part-time staff to conduct field surveys to identify features of historic significance for incorporation into GIS system;
- Gather data on wetlands, critical habitat, and sensitive species for mapping and inclusion in GIS;
- Research development of a ditch system wetlands mitigation bank, including market analysis, agency consultation, candidate site identification, pre-design, and analysis of operational costs;
- Identify and map locations on ditch where water quality degradation is occurring, including mapping of storm drains, run-off from developed properties, and septic system leach fields;
- Evaluate the function of the ditch system in flood water conveyance;
- Prepare a capital improvement program containing projects to protect and preserve the ditch, treat and/or eliminate pollution sources, as well as reduce flood water-related ditch failures;
- Develop a long-term ditch operation and maintenance strategy to reduce water loss, enhance and focus water supply for ecosystem and regional hydrology, reduce fluctuations in stream flows, reduce operating costs, and ensure sustainability;
- Identify and map groundwater well locations in vicinity of ditch;
- Complete trail usage mapping to graphically identify high usage areas, usage conflicts, opportunities for improvements to protect water quality and provide access, and develop ditch trail standards to protect water quality;
- Evaluate and document areas for potential increase in natural water storage along ditch, access for firefighting water, and incorporating fuelbreaks as part of the ditch system;
- Evaluate areas at high risk of fire for linkage to increased water storage;
- Research and develop report on land, water quality, and recreation benefits of the development of conservation, open space, or other permanent easements across private property on the ditch system in cooperation with targeted landowners;
- Produce publications on educational opportunities and distribute;
- Develop policy recommendations for incorporation in County land development manuals and plans;

- Develop education program on the history, purpose and conservation of the ditch system, appropriate land use/maintenance practices, and permits and approvals required for private property improvements in ditch right-of-way or drainages;
- Identify appropriate partners to ensure sustainability of the ditch system and integrate partners into maintenance and outreach programs;
- Develop strategies to link ditch system to heritage tourism and recreation;
- Develop and implement outreach programs for all aspects of project, including recreation, biological, fire protection, historical resources, water supply, and quality;
- Conduct outreach to regional entities educating on the approach and processes undertaken;
- Develop, publish, and reproduce case-study on the project, and distribute and make available to interested communities facing similar challenges relative to their ditch system.

The Tuolumne Utilities District will provide $117,150 of in-kind funds, $37,150 of in-kind services, and utilize another $121,000 of matching funds from the U.S. Environmental Protection Agency. These in-kind funds and services will be applied in part to support the development of deliverables in this grant, in addition to other engineering and assessment work, complimentary to this grant and critical to the overall plan.

The Sierra Nevada Conservancy has identified this project as a model for other communities facing similar issues with open-ditch raw water delivery systems. The District will produce a case-study on the project, and will make its staff available to individuals or other entities interested in applying these methods in other jurisdictions.

PROJECT SCHEDULE

DETAILED PROJECT DELIVERABLES	**TIMELINE**
Develop a GIS database	April 2008 – June 2008
Hire part-time staff and/or consultants to perform GPS field surveys	June 2008
Hire consultant to evaluate eligibility of the ditch system for the National Register of Historic Places	June 2008
Initiate development of capital improvement program	July 2008
Commence evaluations and data collection across entire system	July 2008
Develop and begin outreach and educations programs	August 2008
Complete and submit six-month progress report to SNC	October 2008
Conduct field surveys of existing ditch features for incorporation into GIS	October 2008 – February 2009
Complete and submit twelve-month progress report to SNC	April 2009
Conduct evaluation of ditch system for classification in the NRHP	March 2009 – June 2009
Compile survey data and incorporate into GIS	June 2009 – September 2009
Complete and submit eighteen-month progress report to SNC	October 2009
Finalize NRHP evaluation and summarize findings into a report	October 2009 – December 2009
Finalize evaluations and relative documents and reports	January 2010
Finalize populating GIS with all data gathered and provide copies of key maps and layers to the SNC	January 2010 – February 2010
Finalize case study and distribute throughout region	March 2010
Final Report/Final Payment Request	**May 2010**

PROJECT COSTS

PROJECT BUDGET CATEGORIES	**TOTAL SNC FUNDING**
GIS Development and Staff	$30,000
Consultant services for NRHP evaluation	$75,000
Data Collection, surveys and Map development	$45,000

Outreach and education programs and publications	$75,000
Development of mitigation bank and capital improvement plans	$75,000
Case study development, reproduction, and distribution	$50,000
GRAND TOTAL	**$350,000**

Letters of Support:

- City of Sonora
- Assemblymember Tom Berryhill; 25th Assembly District
- Twain Harte Community Services District
- Tuolumne Board of Supervisors
- Tuolumne County Resource Conservation District
- Tuolumne County Chamber of Commerce
- Tuolumne County Farm Bureau
- Tuolumne Group Sierra Club
- Tuolumne Alliance for Resources and Environment

Recommendation:

The original funding request was for $500,000. Staff recommends funding the project at $350,000 to support the District in completing all phases of the plan. The difference of $150,000 was intended for the development of an EIR. The completion of the plan will position the District to move forward with an EIR to implement capital improvements and enhancements to the ditch system.

Email Form

Project Summary

Tuolumne Ditch System Sustainability Project

The Tuolumne Ditch System was originally built to convey water to gold prospectors in Columbia, Sonora and Tuolumne for hydraulic mining needs. At the height of the Gold Rush, the Tuolumne Ditch System had over 250 miles of ditches and canals. Today, approximately 55 miles of ditches still convey source water to fourteen water treatments plants serving 13,000 connections, as well as over 600 agricultural and irrigation customers.

Over time, the Tuolumne Ditch System has developed into an integral part of the region's hydrologic network, and while it does capture runoff from watersheds through the service area, it also offers a stable source of surface water that has societal and ecological values. In addition to the conveyance and storage elements maintained by the TUD, the system supplements local surface waters, sustains isolated riparian areas and presumably recharges local aquifers to some extent. Over the past 150 years, the quality of the water conveyed through the ditch system has been steadily declining due primarily to an increase in discharges resultant from large-scale land management activities, coupled with an increase and concentration of human activity in the South Fork Stanislaus River watershed. At the same time, visitors to the region and the customers of the TUD have recognized the ditch system as an historical symbol of the County's cultural heritage, a region wide source of water for fire protection and an aesthetically pleasing and popular recreational trail.

In 1999, TUD embarked on preparation of a Ditch Optimization Plan (DOP), which was intended to evaluate operational methods and projects to improve water quality and quantity while identifying cultural, biological, recreational and historical resources which may conflict with ditch operation and improvements. Between 1999 and 2004 in completing the DOP, the data gathered and message from the public, agencies and stakeholders was clear; the Tuolumne Ditch System is a community resource of paramount importance to preserve, protect and improve, to serve a myriad of public values.

Data and public input of sufficient quality and quantity were developed in the DOP process to serve as the foundation for the creation of a comprehensive ditch management program. Building on the DOP process, TUD proposes to implement the Tuolumne Ditch System Sustainability Project in a manner that 1) will evaluate and develop partnerships, programs and project plans to sustain and preserve the ditch system as the primary water conveyance; 2) improve and protect water quality and quantity; 3) maximize the system's functionality to support fire suppression and fuels management activities; 4) ensure the integrity of the system is maintained with regards to historical and cultural resources; 5) maintain or enhance the recreational and heritage tourism opportunities offered by the system; and 6) maintain or enhance the ecological benefits offered by the system.

To be successful, the project will require a variety of discretionary actions that would be subject to the requirements of the California Environmental Quality Act (CEQA). The complexity of the ditch system, combined with the opportunity to consider procedural, programmatic and project specific alternatives provides the basis to consider preparation of a Master Environmental Impact Report.

TUD requests SNC grant funding in the amount of $500,000, to be leveraged with $121,000 in remaining EPA grant funds, $65,000 of in-kind contributions and $78,000 from TUD water funds, for a total project cost of $764,000.